

CLAIMS

What is claimed is:

1 1. A system for the retraction and deployment of a panel, said
2 system comprising:

3 a first planar surface beneath which is disposed a support structure;
4 a panel;

5 an opening disposed in said first planar surface which is configured
6 to receive said panel into a closed position disposed in said
7 opening and substantially co-planar with said first planar
8 surface;

9 at least one slider assembly, comprising a stationary component and
10 a sliding component, said stationary component coupled to said
11 support structure and disposed at a sloping angle, said sliding
12 component coupled to said panel at a hinge point such that said
13 panel is rotatable between a co-planar closed position angle and
14 said sloping angle, and when said sliding component is fully
15 extended is slidable on said slider assembly at said sloping
16 angle to a stowed position; and

17 said panel being movable between said stowed position wherein said
18 panel is pitched at a stowed position angle equal to said
19 sloping angle and said closed position by lifting said panel
20 from either position, rotating said panel to match the angle of
21 the other position, and lowering said panel into the other
22 position.

1 2. The system according to claim 1 further comprising at least one
2 panel edge support disposed beneath said first planar surface, such that
3 when said panel is in said closed position, said panel is supported by said
4 panel edge support.

1 3. The system according to claim 2 wherein said panel edge support
2 is a lip disposed around the edge of said opening.

1 4. The system according to claim 2 wherein said at least one panel
2 edge support comprises a plurality of panel edge supports.

1 5. The system according to claim 2 wherein said at least one panel
2 edge support comprises first and second panel edge supports oppositely
3 disposed, said first and second edge supports being separated by first and
4 second gaps disposed proximate to said hinge point.

1 6. The system according to claim 1 wherein said opening is a
2 geometric shape chosen from the group of geometric shapes consisting of
3 squares, oblongs, triangles, ovals, and circles.

1 7. The system according to claim 1 wherein said opening is bounded
2 by said first planar surface on three sides.

1 8. The system according to claim 1 wherein said front edge of said
2 panel and said front edge of said opening have mating profiles.

1 9. The system according to claim 8 wherein said mating profiles are
2 at an angle equal to said sloping angle.

1 10. The system according to claim 1, further comprising a support
2 member to which one central said slider assembly is attached, said support
3 board being attached at a sloping angle to said support structure.

1 11. The system according to claim 1, a first end of said stationary
2 component being pivotally attached to said support structure, a second end
3 of said stationary component bearing on at least one adjustable support
4 attached to said support structure, said adjustable support having means for
5 adjusting said sloping angle of said stationary components.

1 12. The system according to claim 1, wherein said first planar
2 surface comprises a planar surface selected from the group of planar
3 surfaces consisting of desktops, kiosks, work stations, work benches, plane
4 or boat bulkheads, floors, library tables, conference tables, credenzas,
5 dressing tables, vanities, commodes, benches, seats of chairs, chests,
6 secretaries, occasional tables, kitchen counters, hatches, floors, roads,
7 sidewalks, pavement, and lawns.

1 13. The system according to claim 1, further comprising a second
2 planar surface parallel to said first planar surface and disposed beneath
3 said panel.

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1 14. The system according to claim 13, wherein said second planar
2 surface is stationary.

3
1 15. The system according to claim 13, wherein said second planar
2 surface is slidable.

1 16. The system according to claim 1, further comprising a second
2 planar surface parallel to said first planar surface and disposed beneath
3 said opening.

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1 17. The system according to claim 16, wherein said second planar
2 surface is stationary.

3
1 18. The system according to claim 16, wherein said second planar
2 surface is slidable.

3

3 19. The system according to claim 1 wherein said at least one sliding
4 assembly comprises a plurality of sliding assemblies.

1 20. The system according to claim 19 wherein a reinforcing member
2 connects said plurality of sliding components.

1 21. The system according to claim 1 wherein said panel is at least
2 one panel selected from a group of panels consisting of solar panels, work
3 surfaces, covers, hatch covers, access panels, seats, and manhole covers.

1 22. The system according to claim 1 further comprising storage
2 compartments disposed beneath said panel when said panel is in said closed
3 position and revealed when said panel is in said stowed position.

1 23. The system according to claim 1 further comprising storage
2 compartments disposed beneath said panel when said panel is in said closed
3 position and is stowed when said panel is in said stowed position.

1 24. The system according to claim 1 wherein said hinge point is not
2 lower than the plane of the planar surface when said slider assembly is
3 extended to said upper limit.

1 25. A system for the retraction and deployment of a panel, said
2 system comprising:

3 a first planar surface beneath which is disposed a support structure;

4 a panel selected from a group of panels consisting of solar panels,
5 work surfaces, covers, hatch covers, access panels, seats,
6 manhole covers;

7 an opening disposed in said first planar surface which is configured
8 to receive said panel into a closed position disposed in said
9 opening and substantially co-planar with said first planar
10 surface;

11 at least one slider assembly, comprising a stationary component and
12 a sliding component, said stationary component coupled to said
13 support structure and disposed at a sloping angle, said sliding
14 component coupled to said panel at a hinge point such that said
15 panel is rotatable between a co-planar closed position angle and
16 said sloping angle, and when said sliding component is fully
17 extended is slidable on said slider assembly at said sloping
18 angle to a stowed position; and
19 said panel being movable between said stowed position wherein said
20 panel is pitched at a stowed position angle equal to said
21 sloping angle and said closed position by lifting said panel
22 from either position, rotating said panel to match the angle of
23 the other position, and lowering said panel into the other
24 position.

1 26. A system disposable beneath a planar surface for closure and
2 opening of an opening in said planar surface configured to receive a panel,
3 said system comprising:

4 a support structure configured to be disposed below said planar
5 surface;

6 at least one hinged panel attach point to which said panel may be
7 mounted and whereby said panel may be positioned in a closed
8 position disposed in said opening and substantially co-planar
9 with said first planar surface;

10 at least one slider assembly, comprising a stationary component and
11 a sliding component, said stationary component coupled to said
12 support structure and disposed at a sloping angle, said sliding
13 component coupled to said hinged panel attach point such that
14 said hinged panel attach point is rotatable between a co-planar
15 closed position angle and said sloping angle, and when said

16 sliding component is fully extended is slidable on said slider
17 assembly at said sloping angle to a stowed position; and
18 said hinged panel attach point being movable between said stowed
19 position, wherein said hinged panel attach point is pitched at a
20 stowed position angle equal to said sloping angle, and said
21 closed position by lifting said hinged panel attach point from
22 either position, rotating said hinged panel attach point to
23 match the angle of the other position, and lowering said hinged
24 panel attach point into the other position.